

NOTES ON SOME AUSTRALIAN SPECIES OF CYPERACEAE

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ABSTRACT

Wilson, K. L. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, Australia 2000) 1980. Notes on some Australian species of Cyperaceae. *Telopea* 1 (6): 457-467, Pl. XXVI-XXVII.—The following new species are described: *Baumea johnsonii*, *Bulbostylis burbridgeae*, *Cyperus portae-tartari* and *C. viscidulus*. *Galmia australis* (Nees) K. L. Wilson and *G. drummaudii* (Steud.) K. L. Wilson are published as new combinations and a key provided to *Galmia* section *Microstachyae*. *Cyperus lhotskyanus* Bocck. is reinstated, and *Lepidosperma exsul* C. B. Clarke is relegated to synonymy under *Tricostularia neesii* Lehm. *Cyperus compactus* Retz. is recorded as new for Australia. A key is provided to the Australian species of *Bulbostylis*, and *B. eustachii* J. M. Black ex C. M. Eardley is synonymized under *B. barbata* (Rottb.) C. B. Clarke.

INTRODUCTION

Recent collecting in Australia, particularly in the more remote northern areas, has provided material of new species and of little-known species of Cyperaceae.

In this paper, four new species are described and the synonymies of various other species are discussed. Since recent revisions exist for all but one of the genera dealt with here (*Bulbostylis* being the exception), discussion is brief. Of the revised genera, Kükenthal published revisions of *Cyperus* (1935-36), of *Lepidosperma* (1941 a & b), of *Baumea* (1942) as a subgenus of *Cladium*, of *Galmia* (1943) and of *Tricostularia* (1944). *Galmia* had previously been revised by Benl (1940).

The work reported in this paper was begun at the National Herbarium of New South Wales and was completed after visits in 1977 to the Royal Botanic Gardens, Kew, to the British Museum (Natural History), to the Royal Botanic Gardens, Edinburgh, and to the Laboratoire de Phanérogamie, Paris.

Unless otherwise indicated, all specimens cited have been seen by the author.

BAUMEA Gaudich.

Baumea has been variously regarded as a subgenus of *Cladium* (Kükenthal, 1942), as a synonym of *Machaerina* (Kern, 1974; Vanhecke, 1974) and as a separate genus (Blake, 1969; Raynal, 1972). I am following Blake and Raynal in retaining *Baumea* as a separate genus.

Baumea johnsonii K. L. Wilson, sp. nov. habitu et inflorescentia *B. gummii* (Hook. f.) S. T. Blake et affinibus similis et nullo dubio his speciebus proxima, praecipue culmis foliisque scabridis differt.

HOLOTYPE: NEW SOUTH WALES: Central Tablelands: Govetts Leap, Blackheath, E. F. Constable 5576A, 10.xii.1964 (NSW). ISOTYPES: BRI, CANB, CHR, K, P.

Caespitose perennial. Culms erect, more or less terete to biconvex, scabrous, without nodes, 15-60 cm tall, 1-2 mm diam. Leaves basal, equitant, flattened above, to 150 cm tall, 2-3 mm wide, somewhat soft- to tough-textured, scabrous, shorter than to greatly exceeding culm and inflorescence; sheaths reddish; lowest leaves reduced to sheaths. Inflorescence-bracts reddish, flat, much shorter than lowest branch of inflorescence. Inflorescence paniculiform, (10-) 15-55 cm long, with (10-) 20-35 spikelets; branches slender, somewhat arching, sulcate, \pm scabrous; rhachis elongated between lowest and upper branches, sulcate, scabrous, (5-) 10-38 cm long. Spikelets 6-8 mm long, solitary, with 1 fertile flower, glumes

spreading widely at maturity. *Glumes* 2, linear-lanceolate, long-acuminate, 6–9 mm long, red-brown with paler nerves. *Stamens* 3; anthers 3.0–4.0 mm long, with an apical appendage c. 0.5 mm long. *Style* 3-fid. *Nut* ovoid to ellipsoid, deep golden brown to red-brown, becoming blackish, 2.5–3.5 mm long, strongly 3-costate when immature, sides convex between the costae; base narrow-pyramidal; style-base indistinct, pyramidal, umbonulate at maturity, slightly paler in colour, 0.7–0.8 mm long.

DISTRIBUTION AND HABITAT: Confined to the Central Coast ranges and Central Tablelands of New South Wales. Found in permanently damp, sheltered positions below sandstone cliffs or along creeks.

SPECIMENS EXAMINED: NEW SOUTH WALES: **Central Coast:** c. 1 mile [1.5 km] NW. of Bowens Creek on Mt Irvine road, *Coveny NSW 123150*, 10.1966 (NSW); Linden, *Coveny NSW 123152*, 11.1965 (NSW); Adelina Falls, Lawson, *Coveny 7739 & Hind 7.1976* (NSW). **Central Tablelands:** Green Hill Gully, Mt Wilson, *Gregson NSW 73952*, 4.1902 (NSW); Cocks Cave, Mt Victoria, *Constable 5727*, 3.1965 (K, NSW); Govetts Leap, 2.4 km E. of Blackheath, *Coveny 5996 & Hind 1.1975* (NSW); Govetts Leap, Blackheath, *Coveny NSW 123151*, 10.1966 (NSW); Bridal Veil Falls, Blackheath, *Constable 6063*, 8.1965 (NSW); Blackheath, *Cheel NSW 73951*, 12.1900 (NSW); Centennial Glen, 1¼ miles [2.4 km] W. of Blackheath, *Constable 4998*, 9.1964 (NSW); Centennial Glen, Kanimbla Escarpment, Blackheath, *Evans NSW 73949*, 2.1927 (NSW); Popes Glen, Blackheath, *Constable 6061*, 8.1965 (NSW); Valley of Waters, Wentworth Falls, *Constable 5740*, 3.1965 (NSW); Weeping Rock, Wentworth Falls, *Constable 5743*, 3.1965 (NSW); Carrington Falls, 17 miles [27 km] E. of Moss Vale, *Constable 6257*, 10.1965 (NSW).

The epithet is given in recognition of one of Australia's foremost plant taxonomists, Dr L. A. S. Johnson, whose wide-ranging studies of Australian plants have included Cyperaceae.

This species is closely related to *B. gunnii* (Hook. f.) S. T. Blake, *B. muelleri* (C. B. Clarke) S. T. Blake and *B. nuda* (Steud.) S. T. Blake but differs from them in having scabrous leaves and culms. The four species have very similar spikelets and inflorescence structure. They can be distinguished as follows:

1. Leaves flattened, 1.5–2.5 mm wide.
 2. Leaves and culms scabrous. Leaf sheaths reddish. Nut 2.5–3.5 mm long, shortly stipitate *B. johnsonii*
 - 2.* Leaves and culms not scabrous. Leaf sheaths stramineous. Nut 3.0–3.5 mm long, with elongate stipe *B. muelleri*
- 1.* Leaves reduced to sheaths or terete (0.5–1.5 mm diam.).
 3. Leaves long, terete or \pm bisulcate, c. 0.5 mm diam. Nut c. 2 mm long. Slender plants with leaves usually much exceeding the inflorescence *B. nuda*
 - 3.* Leaves reduced to sheaths or long terete and then c. 1.5 mm diam. Nut 2.5–3.5 mm long. Stoutier plants with leaves (when developed) as long as the inflorescence *B. gunnii*

BULBOSTYLIS Kunth, nom. cons.

Bulbostylis burbridgeae K. L. Wilson, sp. nov. ab omnibus ceteris speciebus australiensibus spiculis valde squarrosis, glumis culmisque valde hispidis differt.

HOLOTYPE: WESTERN AUSTRALIA: Abydos Station, S. of Port Hedland, *N. T. Burbidge 5876*, 26.iv.1958 (NSW). **ISOTYPES:** BRI; CANB—not seen.

Annual herb. *Culms* erect to spreading, c. 4–25 cm tall, c. 0.5 mm diam., \pm terete below inflorescence but becoming biconvex towards the base, strongly and regularly 2–4-costate on each surface, hispid. *Leaves* basal with 1–2 cauline, 3–10 cm long, shorter than culms, channelled on smooth adaxial surface, flattened on abaxial surface with midrib prominent, \pm hirsute; apex of sheaths hyaline, villous. *Inflorescence-bracts* 1–2 greatly exceeding inflorescence, filiform; the lower erect, 1–5 cm long; the upper shorter, erect or spreading. *Inflorescence* simple,

consisting of 1–2 sessile spikelets often with 1–2 spikelets on rays; rays c. 2–10 mm long. *Aerial spikelets* solitary, pallid, squarrose, 5–15 mm long, 1–2 mm wide (excluding mucros), c. 8–24-flowered; rachilla narrowly winged with a few scattered hairs. *Subradical spikelets* often present, similar in morphological features to aerial spikelets but borne on culms < 1 cm long. *Glumes* narrow-ovate to oblong, retuse to emarginate, 2.0–2.5 mm long, with prominent green keel; sides hyaline, pubescent; apex acuminate with a long recurved mucro 1.0–2.0 mm long, 1 nerve on each side close to keel. *Stamens* 3; anthers 1.0–1.8 mm long. *Style* 3-fid. *Nut* trigonous, narrow-obovoid to obovoid, 0.8–1.0 mm long, tricostulate, pustulate, glabrous, shiny, stramineous; style-base subglobose, persistent, 0.1 mm long.

DISTRIBUTION AND HABITAT: Known from the Fortescue District of Western Australia; associated with rocky outcrops.

SPECIMENS EXAMINED: WESTERN AUSTRALIA: Gorge Creek, base of Gorge Range, *Carolin* 7640, 8.1970 (PERTH); Mt Edgar Station, *Burbidge* 1102, 6.1941 (BRI, PERTH—2 sheets).

The epithet is given in honour of the late Dr Nancy Burbidge, who contributed so greatly to our knowledge of the Australian flora.

B. burbidgeae is not closely related to any known Australian or Malesian species nor to any of the Madagascan species which I have seen.

Of the Australian and Malesian species, it is the only one with squarrose spikelets and more or less oblong glumes. It resembles *B. pyriformis* S. T. Blake and *B. puberula* (Poir.) C. B. Clarke in having pubescent glumes but differs from these species in glume colour, in the longer hairs on the glumes, in nut shape and surface, and in the shape of the style-base. In addition, it has a smaller inflorescence than *B. puberula*.

The subradical spikelets (“épis subradicaux” of Raynal, 1976) often found in this species and also in the other Australian species of *Bulbostylis* are not morphologically the same as the basal spikelets found in taxa which exhibit amphicarp, such as *Crosslandia* (Fitzgerald, 1918), *Eleocharis* (Svenson, 1937), *Schoenoplectus* sect. *Supini* (Raynal, l.c.) and some African species of *Bulbostylis* (Haines, 1971). Subradical spikelets are morphologically similar to aerial spikelets and differ only in being borne on shorter culms, whereas basal spikelets differ significantly from aerial spikelets in being composed of solitary female flowers in the axils of leaf-sheaths, with very long styles, usually producing nuts rather different from those produced aerially.

***Bulbostylis barbata* (Rottb.) C. B. Clarke** in Hook. f., Fl. Br. India 6: 651 (1893); Kern, Fl. Malesiana, ser. 1, 7: 539 (1974).

SYNONYMY: *Bulbostylis eustachii* J. M. Black ex C. M. Eardley, Fl. S. Australia, ed. 2: 945 (1957); **synon. nov.** **HOLOTYPE:** Pot plant, grown from seed collected between Everard and Musgrave Ranges, South Australia, by E. C. Black, *J. M. Black* (AD 95701007).

Examination of the holotype of *Bulbostylis eustachii* reveals that it belongs to *B. barbata*, a widespread species in Australia and throughout the Old World; also found in southern U.S.A. The holotype does differ in several respects from the common condition in *B. barbata* but specimens with corresponding differences can be readily found amongst the Australian material of this species. For example, the number of stamens per flower varies (1–2) in the holotype and the anthers are c. 1.0 mm long whereas in *B. barbata* there is usually one stamen, with the anther c. 0.5 mm long. Similarly the nut is more broadly obovoid than, and without the sharply defined angles usually found in *B. barbata*.

The glumes are more pallid than is usual in *B. barbata*, which tends to have red-brown sides to the glumes, and the plants are more flaccid; but this variation can be accounted for by the stage of growth when collected and by conditions of growth. Such variation is a common consequence of cultivation and has no great significance.

The Australian species of *Bulbostylis* can be distinguished as follows:

1. Spikelets squarrose. Glumes 2.0–2.5 mm long with recurved mucro 1.5–2.0 mm long. [Nut obovoid, pusticulate.] W.A. *B. burbridgeae* K. L. Wilson
- 1.* Spikelets not squarrose. Glumes usually mucronulate.
 2. Glumes 2.7–3.3 mm long, pubescent. Nut pyriform, 1.0–1.4 mm long. Qld., N.S.W., N.T. *B. pyriformis* S. T. Blake
 - 2.* Glumes 1.5–2.5 mm long, glabrous (or occasionally with margins ciliolate or keel scabrous). Nut obovoid or turbinate, 0.5–1.1 mm long.
 3. Inflorescence capitate. [Nut obovoid, smooth, minutely reticulate (isodiametric cells).] Qld., N.S.W., S.A., N.T., W.A. *B. barbata* (Rottb.) C. B. Clarke
 - 3.* Inflorescence antherlate, open, occasionally reduced to 1 sessile spikelet.
 4. Nut turbinate, transversely wrinkled and reticulate (elongate cells). Stamens 3. Keel of glumes minutely antrorsely aculeate, scabrous. Qld., N.T., W.A. *B. turbinata* S. T. Blake
 - 4.* Nut obovoid to broadly obovoid, minutely granulate, indistinctly transversely wrinkled. Stamens 2. Keel of glumes smooth. Qld., N.S.W. *B. densa* (Wall. in Roxb.) Hand.-Mazz.

CYPERUS L.

Cyperus portae-tartari K. L. Wilson, sp. nov. inter species sectionis *Pimmarum* culmis scabridis, inflorescentia relative grandi, spiculis brevibus, glumis parvibus quam nucis brevioribus distinguenda.

HOLOTYPE: QUEENSLAND: Burke District: Hells Gate, 17° 27' S, 138° 22' E, *S. Jacobs* 1527, 9.v.1974 (NSW). ISOTYPE: K.

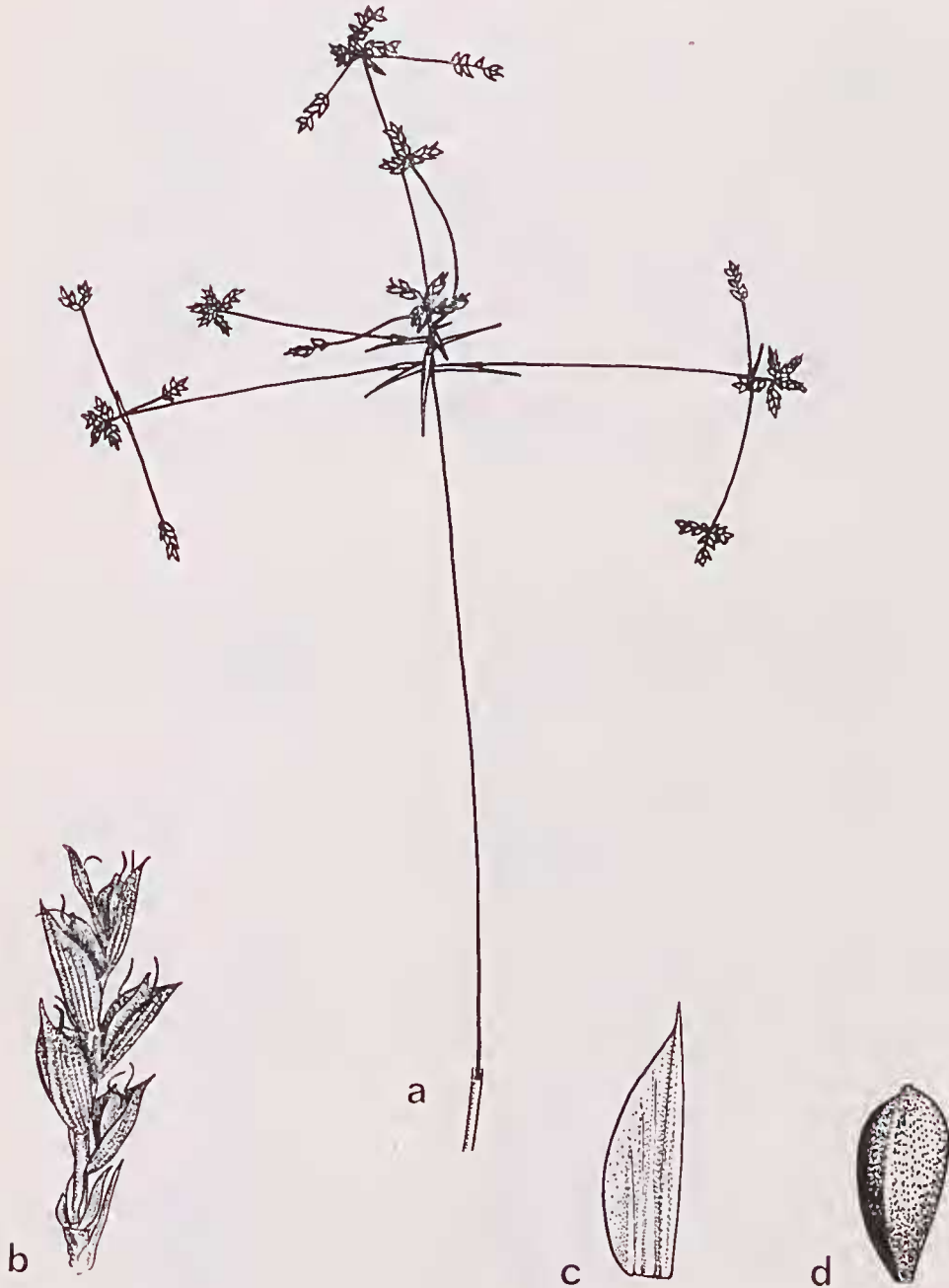
Perennial (?), with fibrous roots. Culms erect, 25–30 cm high, c. 2 mm diam., subtrigonous, strongly antrorsely aculeate and scabrous to nearly smooth. Leaves exceeding culms, flat to narrowly V-shaped in section, keeled, somewhat septate-nodulose, antrorsely aculeate and scabrous on margins and abaxial surface; sheaths pale above, reddish below. Inflorescence-bracts leafy, 4–9 exceeding the inflorescence, to 45 cm long, ± septate-nodulose, margins and abaxial surface antrorsely aculeate and scabrous. Inflorescence supradecomposed, spreading, c. 8–15 cm long; primary rays c. 6–15, flattened, scabrous, to 12 cm long; ultimate branches bearing subdigitate clusters of 2–12 spikelets. Spikelets 4–8-flowered, 2–5 mm long, ± compressed. Rhachilla narrowly winged, deciduous either before or after the glumes fall. Glumes ovate, 1.4–2.1 mm long, with 1.2–1.5 mm interval between adjacent glumes on same side of rhachilla, spreading widely at maturity, golden to red-brown, with 3–5 lateral nerves and broad green keel continued in a recurved mucro of 0.2–0.5 mm, keel often antrorsely aculeate and scabrous. Stamens 3; anthers 0.7–0.9 mm long, with reddish appendage c. 0.2 mm long. Style 3-fid. Nut trigonous, obovoid, 1.2–1.5 mm long, exceeding body of glume, black. Plate XXVI.

DISTRIBUTION AND HABITAT: Found in the sandstone ridges at the northern end of the Queensland-Northern Territory border and in Arnhem Land.

SPECIMENS EXAMINED: QUEENSLAND: see holotype. NORTHERN TERRITORY: Magela Creek, *Dunlop* 3366, 2.1973 (K, NSW); Deaf Adder Creek Valley, *Olsen* 2661, 5.1976 (NSW); Deaf Adder Gorge, *Dunlop* 4455, 2.1977 (NSW ex DNA); near Clyde R, McArthur R area, *Craven* 3499, 1.1976 (BRI); near (NW. of) Katherine, *Blake* 17485, 4.1947 (BRI).

This species belongs to *Cyperus* section *Pimmati* Kükenth.

The epithet is derived from the locality in which the holotype was collected.



Cyperus portae-tartari K. L. Wilson

a. portion of inflorescence, $\times 1$. b. spikelet, $\times 10$. c. glume, $\times 20$. d. nut, $\times 20$ (from Jacobs 1527).

Cyperus viscidulus K. L. Wilson, sp. nov. *C. ixiocarpus* F. Muell. affinis sed spiculis minus viscidis brevioribusque, glumis brevioribus sine mucrone longo differt.

HOLOTYPE: WESTERN AUSTRALIA: 15 miles [24 km] N. of Bow River Station, Kimberleys, *M. Lazarides 5053*, 15.iv.1955 (NSW). ISOTYPES: BRI, CANB, K, P.

Perennial (?), with fibrous roots. Culms erect, 30–90 cm tall, 1–2 mm diam., subtrigonus to terete, smooth. Leaves flat to very narrowly V-shaped in section, equalling or exceeding culms, usually scabrous on margins and abaxial keel; sheaths pallid to purplish-red at base. Inflorescence-bracts leafy, 2–3 equalling to greatly exceeding inflorescence, to c. 45 cm long, usually scabrous on margins and keel. Inflorescence decomposed to supradecomposed, somewhat spreading, 5–15 cm long; primary rays c. 12–20, to 13 cm long; ultimate branches bearing subdigitate clusters of 3–8 spikelets. Spikelets (5–) 8–16 (–28) -flowered, 4–12 mm long, \pm compressed, viscid at maturity. Rhachilla occasionally minutely winged, deciduous either before or after the glumes fall. Glumes ovate, 1.7–2.3 mm long, 1.0–1.5 mm interval between adjacent glumes on same side of rhachilla, slightly curved dorsally, shortly mucronate (mucro c. 0.1 mm long), spreading widely at maturity, pallid to dark golden, with thickened keel and 2–3 nerves on each side. Stamens 3; anthers 0.6–1.0 mm long, with an inconspicuous reddish appendage c. 0.1 mm long. Style 3-fid. Nut trigonus, obovoid to ellipsoid, 1.7–2.0 mm long, subequal to glume, apiculate, black. Plate XXVII.

DISTRIBUTION AND HABITAT: Known from the Northern Territory and the Kimberleys region of Western Australia; found beside streams and waterholes.

SPECIMENS EXAMINED: WESTERN AUSTRALIA: c. 6.5 km W. of King R, S. side of Cockburn Range, *Beaglehole 47240, 47242 & Carr 7.1974* (MEL, NSW); Lennard R Gorge, King Leopold Range, *Carr & Beaglehole 47753, 7.1974* (MEL); 13.5 miles [22 km] NW. of Elgie Cliffs Station, *Lazarides 5103, 4.1955* (BRI, K, MEL); Windjina Gorge, Napier Range, *Beaglehole 47687 & Carr 7.1974* (MEL, NSW). NORTHERN TERRITORY: 70 km from Katherine near Ferguson R, *Blake 16088A, 6.1946* (BRI, NSW); near McAdam Range, *Mueller 10.1855* (MEL 75323).

The epithet refers to the stickiness of the mature spikelets.

This species is most closely related to *Cyperus ixiocarpus* F. Muell., differing from it in having shorter spikelets with the glumes more closely packed on the rhachilla. It also has smaller glumes without a prominent mucro.

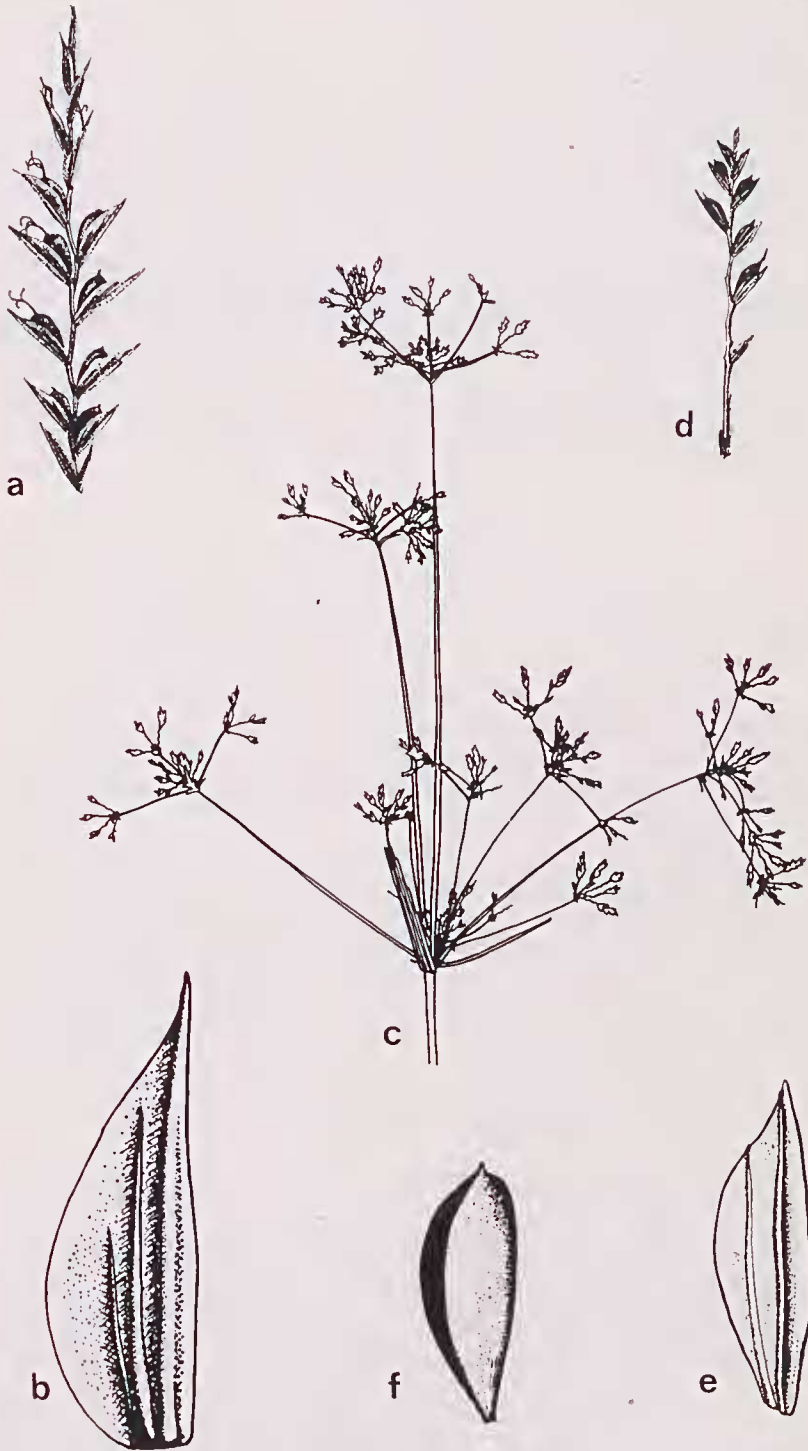
These species, as well as *C. portae-tartari* K. L. Wilson, belong to *Cyperus* section *Pimati* Kükenth. which contains 25–30 closely related species and has its greatest development in tropical and subtropical Australia. This section's closest affinity is with section *Glutinosi* Bocck. which has 7 species in South America and the Pacific Islands. The relationships of these sections will be discussed further in another paper on the taxonomic limits of the genus *Cyperus* sens. lat.

Cyperus compactus Retz., Obs. 5: 10 (1789); Kern, Fl. Malesiana, ser. 1, 7: 638 (1974).

This distinctive species, which is widespread in Southeast Asia, has now been collected in tropical Australia. Mr P. Sharpe of BRI (pers. comm.) has seen two collections of this species from Ingham, Queensland. There is another collection from the Northern Territory and this is matched by the Malesian specimens cited below.

SPECIMENS EXAMINED: AUSTRALIA: NORTHERN TERRITORY: Wagait Reserve, 13° 12' S, 130° 40' E, *Dunlop 3132, 1.1973* (BRI, NSW; NT—not seen).

MALESIA: PHILIPPINES: Leyte, *Wenzel 1299, 5.1915* (NSW). SARAWAK: Sandakan and vicinity, *Ramos 1813, 9–12.1920* (NSW). SINGAPORE: Gelang, *Ridley 8.1900* (NSW 140336).



Cyperus ixiocarpus: a. spikelet, $\times 3$. b. glume, $\times 20$ (from Blake 8755). *Cyperus viscidulus*: c. inflorescence, $\times \frac{2}{3}$. d. spikelet $\times 3$. e. glume, $\times 20$. f. nut, $\times 20$ (from Lazarides 5103).

Cyperus lhotskyanus Boeck. in Bot. Jahrb. Syst. 5: 498 (1884).

HOLOTYPE: Nova Hollandia, *Lhotsky* (KIEL).

SYNONYMY: *Mariscus rutilans* C. B. Clarke in Bull. Misc. Inform. 8: 18 (1908).—*Cyperus rutilans* (C. B. Clarke) Maiden & Betehe, Census New South Wales Pl.: 28 (1916); *synon. nov.* LECTOTYPE (here designated): Armidale, *Perrott* [as 'Parrott'] (K).

Study of the type specimen of *C. lhotskyanus* showed it to be identical with the species hitherto known as *C. rutilans* and thus the former name is correct for this species. Kükenthal (1935–36) referred *C. lhotskyanus* doubtfully to the synonymy of *C. subpinnatus* Kükenth., an allied species.

The lectotype of *M. rutilans* C. B. Clarke is mounted on one sheet with a specimen of *C. victoriensis* C. B. Clarke and another specimen of *C. lhotskyanus* (Liverpool Plains, Moore). On another sheet of *C. lhotskyanus* (Glencg River, *Robertson 561* (K)) Clarke has written "This is not exactly = Parrott's [sic] plant which I take as type of *rutilans*."

This species is found in New South Wales (South Coast and all Tablelands and Slopes divisions), Victoria and south-eastern South Australia.

GAHNIA Forst. et Forst. f.

Gahnia australis (Nees) K. L. Wilson, *comb. nov.*

BASEONYM: *Elynanthus australis* Nees, Ann. Mag. Nat. Hist. 6: 48 (1841); Nees in Lehmann [ed.], Pl. Preiss. 2: 79 (1846), p.p.

HOLOTYPE: WESTERN AUSTRALIA: Swan River, *Drummond s.n.* (CGE—photograph seen). ISOTYPE: K (photograph seen).

SYNONYMY: *Baumea australis* (Nees) S. T. Blake in Contr. Queensland Herb. 8: 28 (1969).—*Cladium elynanthoides* F. Muell., Fragm. 9: 31 (1875); Bentham, Fl. Austral. 7: 409 (1878) *pro max. parte; non illeg.*—*Gahnia elynanthoides* (F. Muell.) F. Muell., Second Syst. Census: 216 (1889); *nom. illeg.*

This little-collected species has been known as *Baumea australis* (Nees) S. T. Blake. However, study of the original description and subsequent examination of specimens which have been referred to it showed that it belongs in *Gahnia* rather than in *Baumea*. It is referable to *Gahnia* section *Microstachyae* Kükenth. Its generic position is indicated not only by its superficial resemblance to the other species of sect. *Microstachyae* but also by its possession of the diagnostic characters necessary to put it into *Gahnia* (see Blake, 1969, p. 25). One of the obvious characters is possession of a leaf-ligule, which is membranous with a minute fringe of hairs in the holotype and isotype (B. Maslin, pers. comm.) and in *Drummond 890*. Both *Gahnia* and *Lepidosperma* have ligules but *G. australis* differs from *Lepidosperma* in having a nut without inflated hypogynous scales.

SPECIMENS EXAMINED: WESTERN AUSTRALIA: Swan River, *Drummond 890* (BM, K—photo seen, P).

No recent collections of this species have been seen by the author but PERTH has not been searched and it is possible that some specimens may be found there.

Nees in Lehmann (1846) cites two collections under his description of *Elynanthus australis*: "Ad flumen Cygnorum Novae Hollandiae Drummond in herb. Lindl." and "In glareosis sterilibus sylvae inter praedia rustica cll. Barker et Lennard, York, Apr. a. 1840. Herb. Preiss No. 1789". The former specimen is the type of *G. australis*; Preiss 1789 (BM, P) is not *G. australis* but *G. lanigera* (R. Br.) Benth., and differs from the common form of that species in having scaberulous culms and leaves (in which it is matched by *Drummond 888* [P]). However, the Preiss specimen agrees in other significant characters with the common form of *G. lanigera*, as does *Drummond 888*.

***Gahnia drummondii* (Steud.) K. L. Wilson, comb. nov.**

BASIONYM: *Schoenus drummondii* Steud., Synopsis Pl. Glum. 2: 165 (1855); non (Steud.) Benth. (1878). HOLOTYPE: Nova Hollandia, *Drummond coll. IV 353*, in herb. Steudel (P).

SYNONYMY: *Gahnia polyphylla* Benth., Fl. Austral. 7: 415 (1878). LECTOTYPE (here designated): Swan River, *Drummond 253*, 1848 (K). ISOLECTOTYPE: P. Benl (1940) designated *Drummond 353* as lectotype of this name but his lectotypification must be set aside since Bentham did not cite that collection with the original description.

Examination of Steudel's herbarium in P showed that *Gahnia polyphylla* Benth. is synonymous with *Schoenus drummondii* Steud. Hence this species must now be known as *Gahnia drummondii*.

SPECIMENS EXAMINED: WESTERN AUSTRALIA: 6.6 km [4.1 miles] NW. of Wongan Hills towards Piawaning, *Coveny 7833 & Maslin 8.1976* (K, NSW, PERTH); 4 km S. of Boxwood Hills, *Newbey 4201*, 6.1974 (NSW ex PERTH); —, *Drummond 102* (K).

Steudel described this species as having flowers with three stamens, but the type specimen has six stamens as do the other specimens which I have examined.

Gahnia australis and *G. drummondii* belong in Kükenthal's section *Microstachyae* (Kükenthal, 1943). A revised key to the species of this section is presented below.

1. Leaf-sheaths with long-ciliate ligules (cilia obvious to the naked eye). [Leaf-bases dark brown-black.]
 2. Leaf-bases dull.
 3. Leaf tips erect, pungent-pointed. W.A..... *G. aristata* F. Muell. ex Benth.
 - 3.* Leaf tips uncinat. W.A..... *G. auctistrophylla* Benth.
 - 2.* Leaf-bases shining. [Leaf tips erect, pungent-pointed.]
 4. Leaves scabrous. Glumes long-aristate, with margins densely ciliate (hairs may be lost with age). S.A., W.A..... *G. densa* (R. Br.) Benth.
 - 4.* Leaves smooth. Glumes shortly mucronate, glabrous. N.S.W., Vic., S.A., W.A..... *G. lanigera* (R. Br.) Benth.
- 1.* Leaf-sheaths with small membranous ligules bearing microscopic fringes of hairs.
 5. Leaf-bases red-brown. Leaf-tips \pm uncinat. [Numerous cauline leaves.] W.A. *G. drummondii* (Steud.) K. L. Wilson
 - 5.* Leaf-bases dark brown to brown-black. Leaf tips erect.
 6. Leaves scabrous, mostly basal but with 1-3 cauline. N.S.W., Vic., Tas. *G. microstachya* Benth.
 - 6.* Leaves smooth, all basal. W.A..... *G. australis* (Nees) K. L. Wilson

TRICOSTULARIA Nees

***Tricostularia neesii* Lehm.**, Pugillus 8: 52 (1844); Pl. Preiss. 2: 83 (1846).

HOLOTYPE: Habitat in Australia occidentali. (Herb. Preiss. no. 1728). Colitur in hort. bot. Hamburg (B? or S?—not seen). ISOTYPE: MEL.

SYNONYMY: *Lepidosperma exsul* C. B. Clarke in Bull. Misc. Inform. 8: 47 (1908), *synon. nov.* HOLOTYPE: Swan River, *Drummond no. 330* (G-DC—not seen). ISOTYPE: K.

Lepidosperma exsul C.B. Clarke was included by Kükenthal (1941b) in his revision of *Lepidosperma*. However, examination of the isotype of this species in K revealed it to be a specimen of *Tricostularia neesii*.

The isotype, *Drummond 330*, bears a note written by C. B. Clarke: "*Lepidosperma exsul* C. B. Clarke ms in Drummond n. 330. This n. 330 was distributed inadvertently by Bentham to herb. DC [= De Condolle]. I have never seen any piece but this; of which I lay in a scrap from herb. DC. Presented by M. DC. June 1894."

Clarke's use of the word 'scrap' to describe the isotype is hardly reasonable—it consists of several culms with inflorescences bearing somewhat immature achenes. However, I think that it is merely a case of misleading terminology and not a mixed specimen since the isotype agrees with both Clarke's and Kükenthal's descriptions of the species.

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